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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,519	10/29/2003	Toshihiko Hanamachi	0001510/2215USU	6369

7590 06/15/2006

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,519

Applicant(s)

HANAMACHI ET AL.

Examiner

Ram N. Kackar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) 7,11 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,8,12,13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-3, 6, 12-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al (US 5688331) in view of Tomonori Niwa (5994251) as evidenced by Divakar et al (US PUB 2000/0185487).**

Aruga et al disclose a film forming apparatus (abstract) comprising a plate which is to be exposed to process gas (Fig 2-39) made of high thermal conductivity Aluminum nitride (Abstract), a heater (43), an electrode for RF (abstract and 41), a thermocouple for detecting temperature (45) a cylindrical support stem (25) which could be made of low thermal conductivity alumina (Col 5 lines 1-4) or AlN (Col 2 lines 63-67), a cover closing an open end of the stem (29), terminals for connecting electricity to RF electrode, heater or thermocouple enclosed by the support stem with conductors attached to them and passing through the cover (87, 89, 91 and 93), a flow path provided through the cover for introducing inert gas (53 and Col 2 lines 35-38) and sealing faces on the stem and the back of plate (Fig 2 and Col 4 lines 38-40).

Aruga et al teach fastening the stem to the susceptor plate with screws (Col 5 lines 1-5) and disclose inert gas at higher pressure inside the stem but do not disclose the sealing structure between the stem and the susceptor plate. Since the good thermal conductivity susceptor is heated at high temperature it is obvious that elastomer O-Ring seals could not be used.

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Tomonori Niwa discloses a sealing ring made of alumina ceramic (Fig 1C and Col 6 lines 61-65). Further Divakar et al teach that Alumina is used for its lower thermal conductivity (Paragraph 33) to block transfer of heat from a susceptor to its holder.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have used alumina sealing ring for its high temperature resistance and machinability.

Regarding unattached zone between the inner and outer circumference of the seal ring it is inherent that there will be some unattached zone due to screw hole to allow for tolerance for the screw.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al (US 5688331) in view of Tomonori Niwa (5994251) as applied to claims 1-3, 6, 12-13 and 15 and further in view of Mase et al (US 5044311).

Aruga et al in view of Tomonori Niwa as discussed above teach that a screw type of fastener is used to attach the susceptor plate to a stem but do not disclose what it is made of.

Mase et al disclose an alumina screw for its insulative property to hold an insulator in a plasma CVD apparatus (abstract and Col 3 lines 49-53).

Therefore using a fastener of alumina would have been obvious to hold the stem to the susceptor through sealing ring of alumina would have been obvious for one of ordinary skill in the art at the time of invention.

Response to Arguments

Applicant's arguments filed 3/27/2006 have been fully considered but they are not persuasive.

Applicant argues that the claims are allowable in view of amendment and its support in Fig 4 of the specification. However this amendment is not enough for allowance since the gap provided by a screw as taught by Aruga et al inherently provides an unattached zone.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar
Primary Examiner AU 1763.